

CONSTRUCTION MANAGEMENT

77 Batson Drive



NEW ENGLAND BIOASSAY A DIVISION OF GZA CHRONIC AQUATIC TOXICITY TEST REPORT

Permitee:		Patrio	t Beverages			NPDES #	MAC	0004936
Report submitted to:		20 Ha	rvard Road			3 a		
	Littleton, MA 01460			E				
Sample ID:		Outfall 001				# St		
Test Month/Year:		0	7/2018			2) 27		
NEB Proj #		05.0	044697.00			2		
Test Type / Method:	-					Static-R	enewa	al Freshwater
	Test Metho	od 1000).0; EPA 821	R-02-	013			
Effluent Sample Dates:	#17/	8-9/18	#2	7/10)-11/1	.8 #3	7	7/12-13/18
Test Start	Date: _		7/9	9/18			e,	
		Re	sults Summ	ary	*			
Your results were as follow	lows:			•				
Passed all permit limits								
		Acu	te Test Res	ults				
Species	LC50)	A-NOE	С	Perr	nit Limit		Pass / Fail
Pimephales promelas	>1009	%	100%		≥	100%		Pass
			nic Test Re	_				
Species	C-NOEC		C-LOEC	IC	25	Permit	Limit	Pass/Fail
Pimephales promelas	100%		>100%	>10	00%	≥ 91	%	Pass
Data Qualifiers affecting	this test:							
2011/02/2020/00								
								ĺ
Certifications & Approvals: NH EL	AP (2071) NID	FP (CT405)					
· · · · · · · · · · · · · · · · · · ·	\	,	,					

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Test Report Certification

Permittee name:	Patriot Beverage	es Permit number:	MA0004936
Client sample ID:	Outfall 001	Test Start Date:	7/9/18
I certify under penalty of supervision in accorda evaluate the information those persons directly re knowledge and belief	of law that this document a nce with a system designed submitted. Based on my in esponsible for gathering inf f, true, accurate, and comp	t Report Certification (Permit and all attachments were prepared und to assure that qualified personnel paquiry of the person or persons who reformation, the information submitted lete. I am aware that there are signification of fine and imprisonment for kinds.	nder my direction or properly gather and manage the system, or dis, to the best of my icant penalties for
Executed on:			
	(Date)	Authorized Signature	
		Print or Type Name and Title	
		Print or Type the Permittee's Na	ıme
		MA000493	6
		Print or Type the NPDES Permit	Number
Whole Efflue	ent Toxicity Test Repo	ort Certification (Bioassay La	boratory)
The r	esults reported relate only	to the samples submitted as receive	d
supervision in accordate evaluate the information	nce with a system designed submitted. Based on my in	and all attachments were prepared ur d to assure that qualified personnel p quiry of the person or persons who n formation, the information submitted	roperly gather and nanage the system, or

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knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Kimberly Wills

Laboratory Manager

New England Bioassay a division of GZA

Executed on:

General Test Conditions

Permittee name:	Patriot Beverages	Permit numbe	r:MA0004936
Client sample ID:	Outfall 001	Test Start Date	e: 7/9/18
	Sample Collection	ction Information	
Effluent #1 Dates/Times	7/0 0/10 @ 0700 063	0 Receiving Water #1 Date/Time:	7/0/19 @ 0630
Effluent #1 Dates/Times: Effluent #2 Dates/Times:	7/8-9/18 @ 0700-063 7/10-11/18 @ 0700-070		7/9/18 @ 0630 7/11/18 @ 0730
Effluent #3 Dates/Times:	7/12-13/18 @ 0700-064		7/13/18 @ 0630
Were a minimum of three:		No *(see note below)	7/13/18 @ 0030
	the first 36 hours of collection?	Yes No * (see note below)	acto holow)
·	the first 36 flours of collection?	res 🗀 No 🗀 ' (see t	iote below)
* sample collection note:			
	Test C	onditions:	
	<u>lest c</u>	onutions.	
Permittee's Receiving Wate	er: Reedy Meadow Brook		
_	atory synthetic soft water (hardne	ocs 45	·
**		ediately upstream of or away from th	no dischargo
Effluent concentrations tes			ie discharge
Was effluent salinity adjust		with Instant Ocean sea salts to	nnt
		O CL-G DPD Colorimetric Method	ppt
Dechlorination was not		o ct-d DFD colorimetric ivietriou	
•			
Aeration: Did Dissolved Oxy	ygen levels fall below 40% satura	tion? Yes No	
		163 2— 110 2—	
rest Aerated a	t <100 bubbles/minute as of:		
TRC results and further info		les can be found attached in "sample	e receipt chemistry"
	Reference	Toxicant Data	
	Fathead	minnows	
	Date:	7/2/18	
	Toxicant:	Sodium chloride	
	- Dilution Water:	NEB Soft Water	
	Organism Source:	NEB	
	Growth IC25:	1.51 g/L	
	Results within range		

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Pimephales promelas Test Results

Permittee name:	Patriot Beverages		Permit number:		MA0004936	
Client sample ID:	Outfall 001		Test Dates:	7/9/18		7/16/18
		Test Acceptability C	<u>Criteria</u>			
Lab Diluent Survival:	100%	Mean Lab Diluent Gro	wth:	0.42	_mg	
Brook Control Survival:	95 %	Mean Brook Control G	Growth:	0.43	_mg	
Thiosulfate Control Survival:	NA%	Mean Thiosulfate Con	trol Growth:	NA	mg	
Presence of an asterisk (*) indi	cates EPA crite	ria was not met, see exp	planation in the '	'Results Disc	ussion"	section at the
bottom of the following page.						
		Test Results				

		Permit Limit	Test Result	Pass/Fail Status
0	48 hr LC50	≥ 100%	>100%	Pass
Acute Data	48 hr NOEC		100%	
Dutu	TUa			
	Chronic LC50		>100%	
	Survival C-NOEC		100%	
	Survival C-LOEC		>100%	
	Growth C-NOEC		100%	
Chronic	Growth C-LOEC		>100%	
Data	Growth IC25		>100%	
	Growth IC50		>100%	
	Reportable C-NOEC	≥ 91%	100%	Pass
	Reportable C-LOEC		>100%	
	MATC		>100%	
	TUc			

Presence of an asterisk (*) indicates qualified data, see explanation in the "Results Discussion" section at the bottom of the following page.

	Test Variability	
Growth PMSD: 8.81% Upp	oer & Lower EPA bounds: 12 - 30%	☐ Low ☐ Within bounds ☐ High
PMSD exceeds upper bound	ds. Test results are highly variable and m	may not be sensitive enough to determine
the presence of toxicity at t	the permit limit concentration (PLC)	
☐ The PMSD falls within the u	upper (30%) and lower (12%) bounds. Re	esults are reportable.
☑ PMSD falls below the lower	bound test variability criterion. The tes	st is very sensitive. The relative percent
difference (RPD) between t	he control and each treatment was calc	culated and compared to the lower bound.
The RPD values for all c considered statistically		nd. Any differences observed in this test are
	observed in these concentrations will n	gnificant have RPD values that fall below the lower not be considered statistically significantly
No statistically significa	nt reductions were observed in this test	t.

Pimephales promelas Test Results

Permittee name	mittee name: Patriot Beverages			Permit number:	MA0004936
Client sample ID		Outfall 001	Test Dates:	7/9/18	7/16/18
		Concentration - Re	esponse Evaluation		
Survival: #3	I1 No concentr	ation-response curve: no mo	ortality observed at any o	oncentration	
Growth: #:	L3 No significar	nt effects at any test concent	tration with a relatively fl	at concentration-re	sponse curve.
	-	ons performed equal to or b	· ·		
The concentration	- response rela	ationship was reviewed and	the following determinat	ion was made:	
Survival	Growth		-		
X	X	Results are reliable and re	portable		
		Results are anomalous	(see explanation below)	
		Results are inconclusive -	retest (see explanation b	elow)	

Results Discussion (if applicable):

TEST METHODS

NEB Issued:8/2/2018

Pimephales promelas

Test type: Modified Chronic Static Renewal Freshwater Test

Test Reference Manual: EPA-821-R-02-013 "Short-Term Methods for Estimating the Chronic Toxicity of

Effluents and Receiving Water to Freshwater Organisms"

Test Method: Pimephales promelas Survival and Growth Test - EPA 1000.0

Temperature: $25 \,^{\circ}\text{C} \pm 1 \,^{\circ}\text{C}$ (Temperatures should not deviate by more than $3 \,^{\circ}\text{C}$ during the test)

(required)

Light Quality: Ambient Laboratory Illumination (recommended)

Light Intensity: 10-20 μ E/m2/s, or 50-100 ft-c (recommended)

Photoperiod: 16 hours light, 8 hours dark (recommended)

Test chamber size: 600 mL (500 mL is recommended minimum)

Test solution volume: 250 mL (recommended minimum)

Renewal of Test Solutions: Daily (required)

Age of Test Organisms: Newly hatched larvae less than 24 hours old (required)

Number of Neonates

Per Test Chamber: 10 (recommended)

Number of Replicate Test

Chambers Per Treatment: 4 (required minimum)

Number of Neonates Per

Test Concentration: 40 (required minimum)

Feeding Regime: 0.15 g twice daily (in the morning prior to renewal and at the end of the work day

following renewal) Sufficient nauplii are added to provide an excess.

(recommended)

Cleaning: Siphoned daily, immediately before test solution renewal (required)

Aeration: None, unless DO concentration falls below 4.0 mg/L, at which point the rate

should not exceed 100 bubbles/minute. (recommended)

Test Duration: 7 days (required)

Endpoints: Survival and growth (weight) (required)

Test Acceptability: 80% or greater survival in controls; average dry weight per surviving organism in

control chambers equals or exceeds 0.25 mg (required)

Sampling Requirements: Minimum of three samples with a maximum holding time of 36 hours before

Pimephales promelas

first use. (required)

Sample volume required: 2.5 L/Day (recommended)

PIMEPHALES PROMELAS DATASHEETS & STATISTICAL ANALYSIS

NEW ENGLAND BIOASSAY TOXICITY DATA FORM CHRONIC COVER SHEET

CLIENT:	Patriot Beverages	P.promelas TEST ID #	18-966
ADDRESS:	20 Harvard Road	CHAIN OF CUSTODY #	C38-2609/10
	Littleton, MA 01460	NEB PROJECT #	05.0044697.00
PERMITTEE:	Patriot Beverages	SAMPLE ID:	Outfall 001
PERMIT NUMBER:	MA0004936	-	
DILUTION WATER:	Soft Synthetic Lab Water	5)	

VERTEBRATES

TEST SET-UP TECHNICIAN:	CD
TEST SPECIES:	Pimephales promelas
NEB LOT #	Pp18(7-9)
AGE:	< 24 hours
TEST SOLUTION VOLUME (mls):	400
ORGANISMS PER TEST CHAMBER:	10
ORGANISMS PER CONCENTRATION:	40

LABORATORY CONTROL WATER (SRCF)

Lot Number	Hardness mg/L	Alkalinity mg/L
C38-S014	46	35

122		
	DATE	TIME
TEST START:	7/9/18	1419
TEST END:	7/16/18	1420

COMMENTS:			
REVIEWED BY:	- Mills	DATE:	8/0/18

NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & AD	DRESS:		Patriot	Beverage	s, 20 Harvard F	Road, Littletor	MA 01	1460
NEB PROJECT NUMB	ER:	05.00446	97.00	TEST NUI	MBER:	18-966	COC#	C38-2609/10
TEST ORGANISM:	Pimephal	es promelo	15	AGE:	<24 hours	Lot #	•	C38-S014
START DATE:	7/9	/18 T	IME:	1419	END DATE	7/16/18	TIME:	1420

Effluent	Replicate				Nur	nber of Si	urvivors			
Concentration	Number					Day			r	
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	CD	CD	DD	MM	CD	MM	MM	CD	4
NED L.	А	10	10	10	10	10	10	10	10	
NEB Lab Synthetic	В	10	10	10	10	10	10	10	10	1
Diluent	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
Reedy	А	10	10	9	9	9	9	9	9	
Meadow	В	10	10	10	10	10	10	10	10	
Brook	С	10	10	10	10	10	10	10	9	
Control	D	10	10	10	10	10	10	10	10	
	А	10	10	10	10	10	10	10	10	
C 350/	В	10	10	10	10	10	10	10	10	
6.25%	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
	А	10	10	10	10	10	10	10	10	
12.5%	В	10	10	10	10	10	10	10	10	
12.5/0	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
	А	10	10	10	10	10	10	10	10	
25%	В	10	10	10	10	10	10	10	10	
23%	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
	А	10	10	10	10	10	10	10	10	
E00/	В	10	10	10	10	10	10	10	10	
50%	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
	Α	10	10	10	10	10	10	10	10	
010/	В	10	10	10	10	10	10	10	10	
91%	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	

D.O. concentration fell below 4.0 mg/L	
All test solutions were aerated at <100 bubbles/minute as of _	

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NEB'S SURVIVAL DATA SHEET FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADD	DRESS:	Patri	ot Beverag	es, 20 Harvard	d Road, Littletor	1 MA 0:	1460
NEB PROJECT NUMBE	R:	05.0044697.00	TEST NU	JMBER:	18-966	COC#	C38-2609/10
TEST ORGANISM:	Pimephale	es promelas	AGE:	<24 hou	rs Lot#		C38-S014
START DATE:	7/9/	18 TIME:	1419	END DAT	TE: 7/16/18	TIME:	1420

Effluent	Replicate				Nur	nber of S	urvivors			
Concentration	Number		1:			Day	Ti.	7		
		0	1	2	3	4	5	6	7	Remarks
	ANALYST	CD	CD	DD	MM	CD	MM	MM	CD	
	Α	10	10	10	10	10	10	10	10	
100%	В	10	10	10	10	10	10	10	10	
10070	С	10	10	10	10	10	10	10	10	
	D	10	10	10	10	10	10	10	10	
	Α									
	В									
	С									
	D									
	А									
	В									
	С									
	D									
	А									
	В									
	С									
	D					J				
	Α									
	В									
	С									
	D									
	Α									
	В									
	С						j.			
	D									
	А									
	В									
	С									
	D									

NEW ENGLAND BIOASSAY WEIGHT DATA FOR FATHEAD MINNOW LARVAL SURVIVAL AND GROWTH TEST

FACILITY NAME & ADDRESS:	Patrio	t Beverages, 20 Harvard Road,	Littleton MA 01460
NEB PROJECT #	05.0044697.00	NEB TEST NUMBER:	18-966
TEST START DATE	7/9/18	WEIGHING DATE:	7/25/18
TEST END DATE	7/16/18	-	
DRYING TEMPERATURE (°C)	100 ± 4	DRYING TIME:	minimum 6 hours
ANALYST-INITIAL WEIGHTS	KO	ANALYST-FINAL WEIGHTS	КО
Effluent Concentration	Replicate Number	A Weight of boat (mg)	B Dry Weight: Foil and Larvae (mg)
	A	871.95	876.42
	В	867.84	871.72
NEB Lab Synthetic Diluent	С	864.47	868.83
	D	869.16	873.32
	A	859.50	863.54
	В	878.83	883.41
Reedy Meadow Brook Control	С	855.90	859.96
	D	869.29	874.00
	A	867.33	871.83
	В	856.88	861.10
6.25%	С	870.99	875.38
	D	872.26	876.61
	A	873.68	878.28
12.5%	В	877.11	881.34
12.5%	С	860.61	865.15
	D	859.00	863.91
	A	853.08	858.25
2504	В	868.31	872.84
25%	С	869.53	874.26
	D	878.78	883.52
	A	863.62	868.93
500/	В	865.09	869.91
50%	С	862.35	867.66
	D	870.31	875.40
	A	873.41	877.62
0404	В	857.45	861.63
91%	С	874.18	878.77
	D	867.63	871.88
	A	874.20	879.07
4000/	В	856.99	861.83
100%	С	865.68	870.51
	D	866.24	871.15

		Final Weight	Initial Weight	Total Weight	Average per	Mean fish	Standard
Concentration	Rep	(mg)	(mg)	(mg)	fish (mg)	weight (mg)	Deviation
NEDIAL	1	876.42	871.95	4.47	0.447	0.4218	0.025902059
NEB Lab	2	871.72	867.84	3.88	0.388		
Synthetic	3	868.83	864.47	4.36	0.436		
Diluent	4	873.32	869.16	4.16	0.416		
	1	863.54	859.50	4.04	0.404	0.4348	0.034769479
Reedy Meadow	2	883.41	878.83	4.58	0.458		
Brook Control	3	859.96	855.90	4.06	0.406		
	4	874.00	869.29	4.71	0.471		
	1	871.83	867.33	4.50	0.450	0.4365	0.01156143
6.25%	2	861.10	856.88	4.22	0.422		
6.25%	3	875.38	870.99	4.39	0.439		
	4	876.61	872.26	4.35	0.435		
	1	878.28	873.68	4.60	0.460	0.4570	0.02786874
42.5%	2	881.34	877.11	4.23	0.423		
12.5%	3	865.15	860.61	4.54	0.454		
	4	863.91	859.00	4.91	0.491		<i>''</i>
	1	858.25	853.08	5.17	0.517	0.4793	0.026961392
250/	2	872.84	868.31	4.53	0.453		
25%	3	874.26	869.53	4.73	0.473		
	4	883.52	878.78	4.74	0.474		
	1	868.93	863.62	5.31	0.531	0.5132	0.023271943
500/	2	869.91	865.09	4.82	0.482		
50%	3	867.66	862.35	5.31	0.531		
	4	875.40	870.31	5.09	0.509		
	1	877.62	873.41	4.21	0.421	0.4308	0.019050372
2404	2	861.63	857.45	4.18	0.418		
91%	3	878.77	874.18	4.59	0.459		
	4	871.88	867.63	4.25	0.425		
	1	879.07	874.20	4.87	0.487	0.4863	0.003593976
1000/	2	861.83	856.99	4.84	0.484		
100%	3	870.51	865.68	4.83	0.483		
İ	4	871.15	866.24	4.91	0.491		

100

10/10

10/10

10/10

10/10

Report Date: Test Code/ID: 20 Jul-18 12:50 (p 1 of 4) 18-966 / 09-3975-8447

							ies	t Code/ID:		18-966 / (J9-3975-844 <i>1</i>
Fathead Minn	now 7-d Larval S	urvival and	d Growt	th Test					ı	New Englar	nd Bioassay
Analysis ID:	02-3450-2880	Énc	dpoint:	2d Survival Ra	ate		CE.	TIS Versior	n: CETIS	/1.9.4	
Analyzed:	20 Jul-18 12:50	Ana	alysis:	Linear Interpo	lation (ICPI	۷)	Sta	tus Level:	1		
Batch ID:	12-6100-1644	Tes	st Type:	Growth-Surviv	/al (7d)		Ana	alyst:			
Start Date:	09 Jul-18 14:19		tocol:	EPA/821/R-02			Dilu	uent: Re	eceiving Wa	ter	
Ending Date:	16 Jul-18 14:20	Spe	ecies:	Pimephales p	romelas		Bri	ne: No	ot Applicable	•	
Test Length:	7d Oh	Tax	on:	Actinopterygii			Sou	urce: In-	-House Culti	ure	Age: <24
Sample ID:	18-6075-9336	Co	de:	6EE8EF28			Pro	ject:			
Sample Date:	: 09 Jul-18 06:30	Ma	terial:	Industrial Efflu	ient		Soc	urce: Pa	atriot Bevera	ges (MA000)4936)
Receipt Date:	: 09 Jul-18 13:15	CA	S (PC):				Sta	tion:			
Sample Age:	8h	Clie	ent:	Patriot Bevera	iges						
Linear Interpo	olation Options										
X Transform	Y Transform	ı See	ed	Resamples	Exp 95%						
Log(X)	Linear	769	752	200	Yes	Two-	Point Inter	polation			
Point Estimat	tes										
Level gm/L	95% LCL	95% UCL	•								
LC50 >100) n/a	n/a									
2d Survival R	tate Summary				Calc	ulated Varia	ite(A/B)			Isoto	nic Variate
Conc-gm/L	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	D	4	1.000	0 1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.000	0 1.0000	1,0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.000	0 1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.000		1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.000		1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.000		1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.000	0 1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
2d Survival R	late Detail										
Conc-gm/L	Code	Rep 1	Rep 2		Rep 4						
0	D	1.0000	1.000		1.0000						
6.25		1:0000	1:000		1.0000						
12.5		1.0000	1.000		1.0000						
25		1.0000	1.000		1.0000						
50		1.0000	1.000		1.0000						
91		1.0000	1.000		1.0000						
100		1.0000	1.000	0 1.0000	1.0000						
2d Survival R	tate Binomials										
Conc-gm/L	Code	Rep 1	Rep 2		Rep 4						
0	Đ	10/10	10/10		10/10						
6.25		10/10	10/10		10/10						
12.5		10/10	10/10		10/10						
25		10/10	10/10		10/10						
50		10/10	10/10	10/10	10/10						
91		10/10	10/10	10/10	10/10						

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:_____

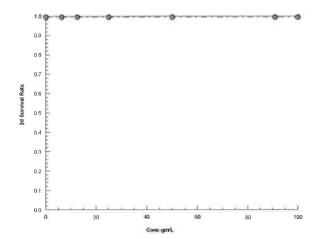
Report Date: Test Code/ID: 20 Jul-18 12:50 (p 2 of 4) 18-966 / 09-3975-8447

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:02-3450-2880Endpoint:2d Survival RateCETIS Version:CETISv1,9,4Analyzed:20 Jul-18 12:50Analysis:Linear Interpolation (ICPIN)Status Level:1

Graphics



Report Date: Test Code/ID: 20 Jul-18 12:50 (p 3 of 4) 18-966 / 09-3975-8447

Fathead Minnow 7-d Larval Survival and Growth Test	New England Bioassay

Analysis ID: 07-3328-8392 Endpoint: 7d Survival Rate CETIS Version: CETISv1,9.4

Analyzed: 20 Jul-18 12:50 Analysis: Linear Interpolation (ICPIN) Status Level: 1

Batch ID: 12-6100-1644 Test Type: Growth-Survival (7d) Analyst:

Start Date: 09 Jul-18 14:19 EPA/821/R-02-013 (2002) Protocol: Diluent: Receiving Water Ending Date: 16 Jul-18 14:20 Pimephales promelas Brine: Not Applicable Species: Test Length: 7d 0h Taxon: Source: In-House Culture Actinopterygii Age: <24

 Sample ID:
 18-6075-9336
 Code:
 6EE8EF28
 Project:

Sample Date: 09 Jul-18 06:30 Material: Industrial Effluent Source: Patriot Beverages (MA0004936)

Receipt Date: 09 Jul-18 13:15 CAS (PC): Station:
Sample Age: 8h Client: Patriot Beverages

Linear Interpolation Options

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Log(X)	Linear	1321621	200	Yes	Two-Point Interpolation

Test Acceptability	Criteria	TAC L	imits		
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	1	0.8	>>	Yes	Passes Criteria

Point Estimates

Level	gm/L	95% LCL	95% UCL			
LC50	>100	n/a	n/a			

7d Survival Rat	Calculated Variate(A/B)								Isotonic Variate		
Conc-gm/L	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	A/B	Mean	%Effect
0	D	4	1.0000	1,0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
6.25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
12.5		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
25		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
50		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
91		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%
100		4	1.0000	1.0000	1.0000	0.0000	0.00%	0.0%	40/40	1	0.0%

7d Survival Rate Detail

Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1.0000	1,0000	1.0000
6.25		1.0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1:0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1,0000	1,0000
100		1.0000	1.0000	1.0000	1.0000

7d Survival Rate Binomials

Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12,5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

17 of 64

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____

QA:

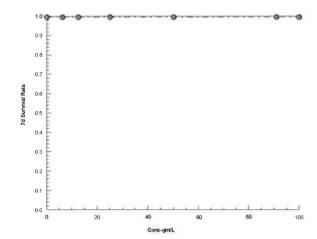
Report Date: Test Code/ID: 20 Jul-18 12:50 (p 4 of 4) 18-966 / 09-3975-8447

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:07-3328-8392Endpoint:7d Survival RateCETIS Version:CETISv1.9.4Analyzed:20 Jul-18 12:50Analysis:Linear Interpolation (ICPIN)Status Level:1

Graphics



Report Date: Test Code/ID:

20 Jul-18 12:50 (p 1 of 2) 18-966 / 09-3975-8447

Fathead Minnow	7-d Larval S	urvival and	Growth T	est						N	ew Englan	d Bioassa
Analysis ID: 09-	-2268-1829	End	point: 7d	Survival Rat	е			CETI	S Version:	CETISv1	.9.4	
Analyzed: 20	Jul-18 12:50	Ana	lysis: No	onparametric-	Control v	vs T	reatments	Statu	s Level:	1		
Batch ID: 12-	-6100-1644	Test	Type: Gr	owth-Surviva	l (7d)			Analy	yst:			
Start Date: 09	Jul-18 14:19	Prot	ocol: EF	PA/821/R-02-	013 (200)2)		Dilue	nt: Red	ceiving Wate	er	
Ending Date: 16	Jul-18 14:20	Spe	cies: Pi	mephales pro	melas			Brine	e: Not	Applicable		
Test Length: 7d	0h	Taxe	on: Ad	tinopterygii				Sour	ce: In-l	House Cultur	re	Age: <2
Sample ID: 18-	-6075-9336	Cod	e : 6E	E8EF28				Proje	ect:		_	
Sample Date: 09	Jul-18 06:30	Mate	erial: Ind	dustrial Efflue	nt			Sour	ce: Pat	riot Beverag	es (MA000	4936)
Receipt Date: 09	Jul-18 13:15	CAS	(PC):					Statio	on:			
Sample Age: 8h		Clie	nt: Pa	atriot Beverag	es							
Data Transform		Alt Hyp						NOEL	LOEL	TOEL	TU	
Angular (Corrected	d)	C > T						100	>100	n/a		
Steel Many-One F	Rank Sum Te	est										
Control vs	Conc-gm	/L	Test Stat	t Critical	Ties	DF	P-Type	P-Value	Decision	(a:5%)		
Dilution Water	6,25		18	10	1	6	Asymp	0.8571	Non-Sign	ificant Effec	t	
	12.5		18	10	1	6	Asymp	0.8571	_	ificant Effec		
	25		18	10	1	6	Asymp	0.8571	-	ificant Effec		
	50		18	10	1	6	Asymp	0.8571	-	ificant Effec		
	91		18	10	1	6	Asymp	0.8571	-	ificant Effec		
			40	10	1	-	A	0.8571	Non-Sign	ificant Effec	t	
	100		18	10	8	6	Asymp					
Test Acceptability		TAC L		10	₹.	-	Asymp					
Test Acceptability				Overlap	Decision		Asymp					
	y Criteria		imits		.00	on	, ,					
Attribute Control Resp	y Criteria Test Stat	Lower	imits Upper	Overlap	Decisi	on	, ,					
Attribute Control Resp ANOVA Table	y Criteria Test Stat	Lower 0.8	imits Upper	Overlap Yes	Decisi	on	, ,	P-Value	Decision	<u> </u>		
Attribute	y Criteria Test Stat	Lower 0.8	imits Upper >>	Overlap Yes	Decisi Passes	on	iteria			<u> </u>		
Attribute Control Resp ANOVA Table Source Between	y Criteria Test Stat 1 Sum Squa	Lower 0.8	imits Upper >> Mean Sq	Overlap Yes	Decision Passes DF 6 21	on	iteria F Stat	P-Value	Decision	<u> </u>		
Attribute Control Resp ANOVA Table Source Between Error	y Criteria Test Stat 1 Sum Squa	Lower 0.8	imits Upper >> Mean Sq	Overlap Yes	Decision Passes	on	iteria F Stat	P-Value	Decision	<u> </u>		
Attribute Control Resp ANOVA Table Source Between Error Total	y Criteria Test Stat 1 Sum Squa 0 0 0	Lower 0.8	imits Upper >> Mean Sq	Overlap Yes	Decision Passes DF 6 21	on	iteria F Stat	P-Value	Decision	<u> </u>		
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	0.8 ares Count	Mean Sq 0	Overlap Yes guare	Decision Passes DF 6 21 27	on s Cr	F Stat 65540	P-Value <1.0E-37	Decision Significar	Std Err	CV%	%Effect
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 0 Summary	0.8	Mean Sq 0 0 0	Overlap Yes Juare 95% LCL	Decision Passes DF 6 21 27 95% Uc 1.0000	on s Cr	F Stat 65540 Median 1.0000	P-Value <1.0E-37 Min 1.0000	Decision Significar Max 1.0000	Std Err 0.0000	CV% 0.00%	0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4	Mean Sq 0 0 Mean 1.0000 1.0000	Overlap Yes 95% LCL 1.0000 1.0000	Decision Passes DF 6 21 27 95% U6 1.0000 1.0000	on s Cr	F Stat 65540 Median 1.0000 1.0000	P-Value <1.0E-37 Min 1.0000 1.0000	Decision Significan Max 1.0000 1.0000	Std Err 0.0000 0.0000	CV% 0.00% 0.00%	0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4 4	Mean Sq 0 0 0 	Overlap Yes 95% LCL 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 95% U6 1.0000 1.0000 1.0000 1.0000	on s Cr	F Stat 65540 Median 1.0000 1.0000 1.0000	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000	Max 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L 0 5.25 12.5	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4 4 4	Mean Sq 0 0 0 	Overlap Yes 95% LCL 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 1.0000 1.0000 1.0000 1.0000 1.0000	on s Cr	F Stat 65540 	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000	Max 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L 0 6.25 12.5 25	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4 4 4 4 4	Mean Sq 0 0 0 	Overlap Yes 95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.000000 1.000000 1.000000 1.00000 1.000000 1.000000 1.00000000	on s Cr	F Stat 65540 	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000	Max 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4 4 4 4 4 4	Mean Sq 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 95% Unit 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000	on s Cr	F Stat 65540 Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Max 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code	Count 4 4 4 4 4 4	Mean Sq 0 0 0 	Overlap Yes 95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.00000 1.000000 1.000000 1.000000 1.00000 1.000000 1.000000 1.00000000	on s Cr	F Stat 65540 	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000	Max 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	0.8 Count 4 4 4 4 4 4	Mean Sq 0 0 0 0 .0000 1.0000 1.0000 1.0000 1.0000	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 95% Unit 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.000	on s Cr	F Stat 65540 Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91 1000 Angular (Correcte	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 Count Count	Mean Sq 0 0	Overlap Yes 95% LCL 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000	Decision Passes DF 6 21 27 95% U6 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	on s Cr	## Stat 65540 Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Median Medi	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Min	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% CV%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L) 6.25 12.5 25 60 91 1000 Angular (Correcte Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 Count Count	Mean Sq 0 0 0 0 .0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	95% LCL 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000 1,0000	Decision Passes DF 6 21 27 95% U6 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.010000	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Min 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% CV% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% WEffect
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91 100 Angular (Correcte Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 Count Count	Mean Sq 0 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Decision Passes DF 6 21 27 95% U6 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.00000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.01000	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Min 1.412 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91 100 Angular (Correcte Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 Count Count	Mean Sq 0 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0121 1.412 1.412 1.412	Decision Passes DF 6 21 27 1.0000 1.	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412	P-Value <1.0E-37 Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 Min 1.412 1.412 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 Max 1.412 1.412 1.412	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Fotal 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 60 91 1000 Angular (Correcte Conc-gm/L	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 Count Count 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mean Sq 0 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.010000	Decision Passes DF 6 21 27 1.0000 1.	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412	Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mean Sq 0 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0121 1.412 1.412 1.412	Decision Passes DF 6 21 27 95% U6 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412 1.412	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412 1.412	Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412 1.412	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%
Attribute Control Resp ANOVA Table Source Between Error Total 7d Survival Rate Conc-gm/L 0 6.25 12.5 25 50 91 100 Angular (Correcte Conc-gm/L 0 6.25 12.5	y Criteria Test Stat 1 Sum Squa 0 0 0 Summary Code D	Count 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	Mean Sq 0 0 0 0 	95% LCL 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.010000	Decision Passes DF 6 21 27 1.0000 1.	on s Cr	Median 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412	Min 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.412 1.412 1.412 1.412	Max 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000 1.0000	Std Err 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 Std Err 0 0 0	CV% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%	0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00% 0.00%

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:_____

Report Date: Test Code/ID: 20 Jul-18 12:50 (p 2 of 2) 18-966 / 09-3975-8447

Fathead Minnow 7-d Larval Survival and Growth Test New England Bioassay

Analysis ID:09-2268-1829Endpoint:7d Survival RateCETIS Version:CETISv1.9.4Analyzed:20 Jul-18 12:50Analysis:Nonparametric-Control vs TreatmentsStatus Level:1

7d Survival Rate Detail

Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.0000	1,0000	1.0000	1.0000
6.25		1,0000	1.0000	1.0000	1.0000
12.5		1.0000	1.0000	1.0000	1.0000
25		1.0000	1.0000	1.0000	1.0000
50		1.0000	1.0000	1.0000	1.0000
91		1.0000	1.0000	1.0000	1.0000
100		1.0000	1.0000	1,0000	1.0000

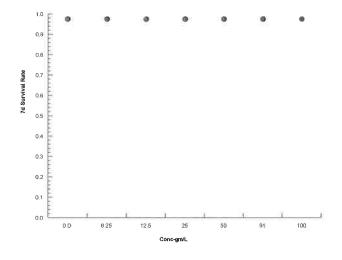
Angular (Corrected) Transformed Detail

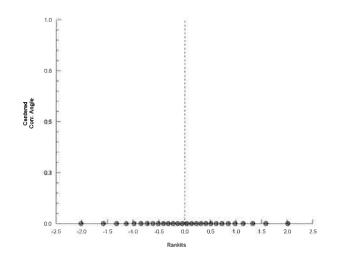
Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	1.412	1.412	1.412	1.412
6.25		1.412	1.412	1.412	1.412
12.5		1.412	1.412	1.412	1.412
25		1.412	1.412	1.412	1,412
50		1.412	1.412	1.412	1.412
91		1.412	1.412	1.412	1.412
100		1.412	1.412	1.412	1.412

7d Survival Rate Binomials

Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	10/10	10/10	10/10	10/10
6.25		10/10	10/10	10/10	10/10
12.5		10/10	10/10	10/10	10/10
25		10/10	10/10	10/10	10/10
50		10/10	10/10	10/10	10/10
91		10/10	10/10	10/10	10/10
100		10/10	10/10	10/10	10/10

Graphics





Report Date: Test Code/ID: 25 Jul-18 16:05 (p 1 of 2) 18-966 / 09-3975-8447

	7-d Larvai S	urvival and	d Growth Te	est					Ne	w Englan	d Bioassay
,	5931-5340 Jul-18 16:04		-	an Dry Biom	_	tments		S Version	: CETISv1.	.9.4	
	5100-1644		t Type: Gro				Anal				=
	Jul-18 14:19			A/821/R-02-			Dilue	-	ceiving Water	r	
Ending Date: 16				nephales pro	` '		Brine		t Applicable		
Test Length: 7d		•		inopterygii			Sour		House Culture	е	Age: <24
Sample ID: 18-6	6075-9336	Cod	de: 6El	E8EF28			Proje	ect:			
Sample Date: 09		Mat	erial: Ind	ustrial Efflue	ent		Sour		triot Beverage	es (MA000	4936)
Receipt Date: 09	Jul-18 13:15	CAS	S (PC):				Stati	on:	_		
Sample Age: 8h		Clie		riot Beverag	es						
Data Transform		Alt Hyp					NOEL	LOEL	TOEL	TU	PMSD
Untransformed		C > T					100	>100	n/a		8.81%
Dunnett Multiple	Comparison	Test									
Control vs	Conc-gm	ı/L	Test Stat	Critical		P-Type	P-Value	Decision			
Dilution Water	6.25		-0.9717	2.448	0.037 6	CDF	0.9862	•	nificant Effect		
	12.5		-2.322	2.448	0.037 6	CDF	0.9998	ū	nificant Effect		
	25		-3.788	2.448	0.037 6	CDF	1.0000	-	nificant Effect		
	50		-6.028	2.448	0.037 6	CDF	1.0000	_	nificant Effect		
	91 100		-0.593 -4.249	2.448 2.448	0.037 6 0.037 6	CDF CDF	0.9616 1.0000	-	nificant Effect nificant Effect		
Test Acceptability											
Attribute	Test Stat	TAC L Lower	imits Upper	Overlap	Decision						
Control Resp	0.4217	0.25	>>	Yes	Passes Cr	riteria					
ANOVA Table											
Source											
	Sum Saua	ares	Mean Squ	ıare	DF	F Stat	P-Value	Decision	າ(α:5%)		
Between	Sum Squa 0.0270873		0.0045145		DF 6	F Stat 9.797	P-Value 3.4E-05	Decision Significa	<u> </u>		
Between Error		3		5					<u> </u>		
	0.0270873	3	0.0045145	5	6				<u> </u>		
Error	0.0270873 0.0096769 0.0367641	3	0.0045145	5	6 21				<u> </u>		
Error Total	0.0270873 0.0096769 0.0367641	3	0.0045145	5	6 21	9.797			nt Effect		
Error Total Distributional Tes	0.0270873 0.0096769 0.0367641 ts Test	3	0.0045145	5	6 21 27	9.797	3.4E-05 P-Value 0.1518	Significa Decision Equal Va	nt Effect n(α:1%) ariances		
Error Total Distributional Tes Attribute	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq	3	0.0045145 0.0004608 nriance Test	5	6 21 27 Test Stat	9.797 Critical	3.4E-05	Significa Decision Equal Va	nt Effect n(α:1%)		
Error Total Distributional Tes Attribute Variances	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W	B B Juality of Va Jilk W Norm	0.0045145 0.0004608 nriance Test	5	6 21 27 Test Stat 9,411	9.797 ——————————————————————————————————	3.4E-05 P-Value 0.1518	Significa Decision Equal Va	nt Effect n(α:1%) ariances		
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L	0.0270873 0.0096769 0.0367641 ts	guality of Va filk W Norm nary Count	0.0045145 0.0004608 ariance Test nality Test	95% LCL	6 21 27 Test Stat 9,411 0.9593 95% UCL	9.797 Critical 16.81 0.8975	9-Value 0.1518 0.3353	Decision Equal Va Normal D	nt Effect n(α:1%) ariances Distribution Std Err	CV%	%Effect
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W	juality of Va /ilk W Norm nary Count	0.0045145 0.0004608 ariance Test nality Test Mean 0.4217	95% LCL 0.3805	6 21 27 Test Stat 9,411 0.9593 95% UCL 0.463	9.797 Critical 16.81 0.8975 Median 0.426	9-Value 0.1518 0.3353 Min 0.388	Decision Equal Va Normal I	nt Effect n(α:1%) ariances Distribution Std Err 0.01295	6.14%	0.00%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25	0.0270873 0.0096769 0.0367641 ts	juality of Va /ilk W Norm nary Count 4	0.0045145 0.0004608 ariance Test nality Test Mean 0.4217 0.4365	95% LCL 0.3805 0.4181	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549	9.797 Critical 16.81 0.8975 Median 0.426 0.437	9-Value 0.1518 0.3353 Min 0.388 0.422	Decision Equal Va Normal I Max 0.447 0.45	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781	6.14% 2.65%	0.00% -3.50%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5	0.0270873 0.0096769 0.0367641 ts	juality of Va /ilk W Norm nary Count 4 4	0.0045145 0.0004608 ariance Test nality Test Mean 0.4217 0.4365 0.457	95% LCL 0.3805 0.4181 0.4127	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457	9-Value 0.1518 0.3353 Min 0.388 0.422 0.423	Decision Equal Va Normal I Max 0.447 0.45 0.491	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393	6.14% 2.65% 6.10%	0.00% -3.50% -8.36%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25	0.0270873 0.0096769 0.0367641 ts	juality of Va filk W Norm Count 4 4 4	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792	95% LCL 0.3805 0.4181 0.4127 0.4364	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735	9-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348	6.14% 2.65% 6.10% 5.63%	0.00% -3.50% -8.36% -13.63%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50	0.0270873 0.0096769 0.0367641 ts	juality of Va filk W Norm Count 4 4 4 4	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52	9-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.423 0.453 0.482	Decision Equal Va Normal E Max 0.447 0.45 0.491 0.517 0.531	nt Effect n(α:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164	6.14% 2.65% 6.10% 5.63% 4.53%	0.00% -3.50% -8.36% -13.63% -21.70%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91	0.0270873 0.0096769 0.0367641 ts	juality of Va filk W Norm Count 4 4 4 4	0.0045145 0.0004608 0.0004608 0.0004608 Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	juality of Va filk W Norm Count 4 4 4 4 4	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52	9-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.423 0.453 0.482	Decision Equal Va Normal E Max 0.447 0.45 0.491 0.517 0.531	nt Effect n(α:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	juality of Va filk W Norm Count 4 4 4 4 4	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805	6 21 27 Test Stat 9,411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	quality of Va rilk W Norm Count 4 4 4 4 4 4 4	0.0045145 0.0004608 nriance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805	6 21 27 Test Stat 9,411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 Mean Dry Biomas	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	quality of Va filk W Norm nary Count 4 4 4 4 4 4 4 4 4 0,447	0.0045145 0.0004608 Initiance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 6.25 6.25	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	Juality of Variative of Variati	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388 0.422	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436 0.439	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416 0.435	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	Rep 1 0.447 0.45 0.46	0.0045145 0.0004608 driance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388 0.422 0.423	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436 0.439 0.454	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416 0.435 0.491	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	Rep 1 0.447 0.45 0.517	0.0045145 0.0004608 Initiance Test Inality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388 0.422 0.423 0.453	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436 0.439 0.454 0.473	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416 0.435 0.491 0.474	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 50 91 50 6.25 50 6.25 50 6.25 50	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	Rep 1 0.447 0.45 0.531	0.0045145 0.0004608 Initiance Test nality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388 0.422 0.423 0.423 0.453 0.482	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436 0.439 0.454 0.473 0.531	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416 0.435 0.491 0.474 0.509	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%
Error Total Distributional Tes Attribute Variances Distribution Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100 Mean Dry Biomas Conc-gm/L 0 6.25 12.5 25 50 91 100	0.0270873 0.0096769 0.0367641 ts Test Bartlett Eq Shapiro-W s-mg Summ Code D	Rep 1 0.447 0.45 0.517	0.0045145 0.0004608 Initiance Test Inality Test Mean 0.4217 0.4365 0.457 0.4792 0.5132 0.4308 0.4863 Rep 2 0.388 0.422 0.423 0.453	95% LCL 0.3805 0.4181 0.4127 0.4364 0.4762 0.4004 0.4805 Rep 3 0.436 0.439 0.454 0.473	6 21 27 Test Stat 9.411 0.9593 95% UCL 0.463 0.4549 0.5013 0.5221 0.5503 0.4611 0.492 Rep 4 0.416 0.435 0.491 0.474	9.797 Critical 16.81 0.8975 Median 0.426 0.437 0.457 0.4735 0.52 0.423	7.4E-05 P-Value 0.1518 0.3353 Min 0.388 0.422 0.423 0.453 0.453 0.482 0.418	Decision Equal Va Normal I Max 0.447 0.45 0.491 0.517 0.531 0.459	nt Effect n(a:1%) ariances Distribution Std Err 0.01295 0.005781 0.01393 0.01348 0.01164 0.009526	6.14% 2.65% 6.10% 5.63% 4.53% 4.42%	0.00% -3.50% -8.36% -13.63% -21.70% -2.13%

000-222-335-4 CETIS™ v1.9.4.1 Analyst:____ QA:____

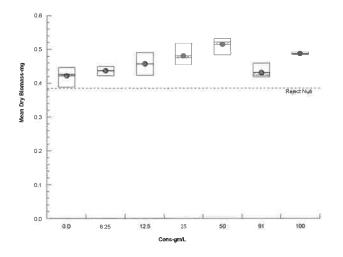
Report Date: Test Code/ID: 25 Jul-18 16:05 (p 2 of 2) 18-966 / 09-3975-8447

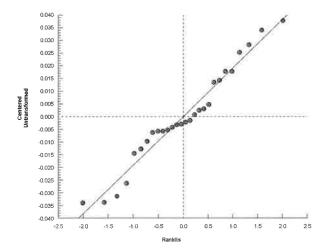
Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID:07-5931-5340Endpoint:Mean Dry Biomass-mgCETIS Version:CETISv1.9.4Analyzed:25 Jul-18 16:04Analysis:Parametric-Control vs TreatmentsStatus Level:1

Graphics





Report Date: Test Code/ID: 25 Jul-18 16:05 (p 1 of 2) 18-966 / 09-3975-8447

Fathead Minr	now 7-d Larval Surv	rival and Growt	h Test		New Engla	ınd Bioassay
Analysis ID: Analyzed:	05-3564-4015 25 Jul-18 16:05	Endpoint: Analysis:	Mean Dry Biomass-mg Linear Interpolation (ICPIN)	CETIS Vers Status Lev		
Batch ID:	12-6100-1644	Test Type:	Growth-Survival (7d)	Analyst:		
Start Date:	09 Jul-18 14:19	Protocol:	EPA/821/R-02-013 (2002)	Diluent:	Receiving Water	
Ending Date:	16 Jul-18 14:20	Species:	Pimephales promelas	Brine:	Not Applicable	
Test Length:	7d 0h	Taxon:	Actinopterygii	Source:	In-House Culture	Age: <24
Sample ID:	18-6075-9336	Code:	6EE8EF28	Project:		
Sample Date:	09 Jul-18 06:30	Material:	Industrial Effluent	Source:	Patriot Beverages (MA00	004936)
Receipt Date:	09 Jul-18 13:15	CAS (PC):		Station:		

Linear Interpolation Options

Client:

X Transform	Y Transform	Seed	Resamples	Exp 95% CL	Method
Linear	Linear	717482	200	Yes	Two-Point Interpolation

Patriot Beverages

Test Acceptability	Criteria	TAC L	imits.		
Attribute	Test Stat	Lower	Upper	Overlap	Decision
Control Resp	0.4217	0.25	>>	Yes	Passes Criteria

Point Estimates

Sample Age: 8h

Level	gm/L	95% LCL	95% UCL		
IC25	>100	n/a	n/a		
IC50	>100	n/a	n/a		

Mean Dry Biom	nass-mg Sum	nmary	Calculated Variate Isoto						Isoton	otonic Variate	
Conc-gm/L	Code	Count	Mean	Min	Max	Std Dev	CV%	%Effect	Mean	%Effect	
0	D	4	0.4217	0.388	0.447	0.0259	6.14%	0.0%	0.4615	0.0%	
6.25		4	0.4365	0.422	0.45	0.01156	2.65%	-3.5%	0.4615	0.0%	
12.5		4	0.457	0.423	0.491	0.02787	6.10%	-8.36%	0.4615	0.0%	
25		4	0.4792	0.453	0.517	0.02696	5.63%	-13.63%	0.4615	0.0%	
50		4	0.5132	0.482	0.531	0.02327	4.54%	-21.7%	0.4615	0.0%	
91		4	0.4308	0.418	0.459	0.01905	4.42%	-2.13%	0.4585	0.66%	
100		4	0.4863	0.483	0.491	0.003595	0.74%	-15,29%	0.4585	0.66%	

Mean Dry Biomass-mg Detail

Conc-gm/L	Code	Rep 1	Rep 2	Rep 3	Rep 4
0	D	0.447	0.388	0.436	0.416
6.25		0.45	0.422	0.439	0.435
12.5		0.46	0.423	0.454	0.491
25		0.517	0.453	0.473	0.474
50		0.531	0.482	0.531	0.509
91		0.421	0.418	0.459	0.425
100		0.487	0.484	0.483	0.491

000-222-335-4 CETIS™ v1.9.4.1 Analyst:_____ QA:_____

Report Date: Test Code/ID: 25 Jul-18 16:05 (p 2 of 2) 18-966 / 09-3975-8447

Fathead Minnow 7-d Larval Survival and Growth Test

New England Bioassay

Analysis ID: 05-3564-4015 **Analyzed:** 25 Jul-18 16:05

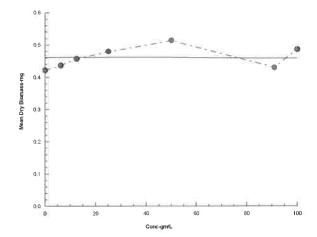
Endpoint: Mean Dry Biomass-mg
Analysis: Linear Interpolation (ICPIN)

CETIS Version: CETISv1.9.4

Status Level: 1

Graphics

000-222-335-4



NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDR	ESS:				d, Littleton N	ЛА 01460		
NEB PROJECT NUMBER:			5.0044697.0		TEST ORGA			phales promelas
DILUTION WATER SOUR			ynthetic Lab		START DAT			TIME: 1419
ANALYST	MM	ТВР	ТВР	MM	CW	ТВР	MM	
NEB Lab Synthetic Diluent	1	2	3	4	5	6	7	Remarks
Temp °C Initial	26.0	25.9	26.0	25.3	26.0	26.0	26.0	
D.O. mg/L Initial	8.1	8.1	8.0	8.3	8.2	8.2	8.1	
pH s.u. Initial	7.5	7.8	7.6	7.5	7.2	7.8	7.7	
Conductivity µS Initial	174	174	176	174	175	174	174	
Temp °C Final	25.3	25.5	24.9	25.2	25.5	25.6	25.9	
D.O. mg/L Final	7.6	6.7	7.1	7.4	7.2	7.3	6.6	
oH s.u. Final	7.3	7.2	7.2	7.2	7.6	7.0	7.7	
Conductivity µS Final	191	209	201	206	198	192	206	
Brook Control	1	2	3	4	5	6	7	Remarks
Temp °C Initial	26.0	25.3	25.9	26.2	26.0	24.9	26.0	
D.O. mg/L Initial	5.5	8.0	7.6	8.1	7.7	7.8	8.7	
pH s.u. Initial	7.1	7.3	7.1	7.2	6.9	7.2	7.1	
Conductivity µS Initial	764	759	906	906	863	856	859	
Геmp °C Final	25.2	25.6	24.8	25.0	24.4	25.5	25.8	
D.O. mg/L Final	7.3	6.6	6.9	7.3	6.9	7.2	6.5	
pH s.u. Final	7.0	7.1	7.0	7.1	7.3	6.8	7.6	
Conductivity µS Final	771	804	919	948	893	870	887	
6.25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	26.0	25.9	26.0	25.3	26.0	26.0	26.0	
D.O. mg/L Initial	8.1	8.0	8.1	8.2	8.2	8.2	8.1	
oH s.u. Initial	7.8	8.1	8.1	8.1	8.0	8.4	8.4	
Conductivity uS Initial	356	366	373	348	372	385	364	
Temp °C Final	25.6	25.8	24.9	25.4	24.9	25.6	26.0	
D.O. mg/L Final	7.4	7.0	7.4	7.4	7.0	7.1	6.5	
oH s.u. Final	7.9	7.9	7.9	7.8	7.8	7.5	7.9	
Conductivity µS Final	368	387	394	380	403	398	395	
12.5%	1	2	3	4	5	6	7	Remarks
emp °C Initial	26.0	25.9	26.0	25.3	25.8	26.0	26.0	
D.O. mg/L Initial	8.0	8.0	8.0	8.3	8.2	8.2	8.2	
oH s.u. Initial	8.0	8.1	8.2	8.3	8.2	8.5	8.5	
Conductivity µS Initial	485	494	511	497	519	525	528	
「emp °C Final	25.2	25.6	24.7	25.1	24.8	25.5	25.9	
D.O. mg/L Final	7.4	7.0	7.4	7.5	7.3	7.1	6.7	
oH s.u. Final	8.1	8.1	8.2	8.2	8.3	8.0	8.3	
Conductivity µS Final	499	519	536	522	544	539	560	=

NEB'S DATA SHEET FOR ROUTINE CHEMICAL AND PHYSICAL DETERMINATIONS

FACILITY NAME & ADDR	ESS;	Patriot Bev	erages, 20 H	arvard Road	d, Littleton N	1A 01460		
NEB PROJECT NUMBER:			5.0044697.0		TEST ORGA			phales promelas
DILUTION WATER SOUR	CE:	Soft S	ynthetic Lab	Water	START DAT	E:	7/9/18	TIME: 1419
25%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.9	25.8	26.0	25.3	25.7	26.0	26.0	
D.O. mg/L Initial	7.7	8.0	8.1	8.3	8.3	8.3	8.3	
pH s.u. Initial	8.1	8.2	8.4	8.4	8.4	8.6	8.6	
Conductivity µS Initial	816	808	852	823	870	859	862	
Temp °C Final	25.3	25.6	24.6	25.0	24.9	25.5	25.9	
D.O. mg/L Final	7.3	7.0	7.4	7.4	7.3	7.1	6.7	
pH s.u. Final	8.4	8.4	8.5	8.5	8.5	8.5	8.6	
Conductivity µS Final	825	845	882	872	903	874	894	
50%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.5	25.9	26.0	25.4	25.4	26.0	26.0	
D.O. mg/L Initial	7.3	8.0	8.3	8.3	8.3	8.3	8.4	
pH s.u. Initial	8.1	8.2	8.4	8.5	8.5	8.6	8.6	
Conductivity µS Initial	1,434	1,432	1,463	1,463	1,538	1,529	1,529	
Temp °C Final	25.1	25.6	24.6	25.0	24.9	25.5	25.8	
D.O. mg/L Final	7.3	7.0	7.4	7.3	7.1	7.0	6.6	1
pH s.u. Final	8.5	8.6	8.6	8.7	8.7	8.7	8.8	
Conductivity µS Final	1,432	1,472	1,501	1,520	1,566	1,538	1,560	
91%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.0	25.1	26.0	25.2	24.2	26.0	26.0	
D.O. mg/L Initial	6.4	7.7	8.7	8.5	8.7	8.5	8.9	
pH s.u. Initial	8.1	8.2	8.5	8.5	8.5	8.6	8.6	
Conductivity µS Initial	2,392	2,376	2,431	2,430	2,500	2,599	2,568	
Temp °C Final	25.1	25.5	24.7	25.0	24.8	25.5	25.8	
D.O. mg/L Final	6.8	6.9	7.2	7.2	7.0	6.9	6.5	
pH s.u. Final	8.5	8.5	8.6	8.7	8.8	8.8	8.8	
Conductivity µS Final	2,374	2,369	2,444	2,476	2,509	2,582	2,582	
100%	1	2	3	4	5	6	7	Remarks
Temp °C Initial	25.0	25.0	26.0	25.4	24.1	26.0	26.0	
D.O. mg/L Initial	5.4	7.6	9.1	8.8	9.0	9.3	9.5	
pH s.u. Initial	8.1	8.2	8.4	8.5	8.6	8.6	8.6	
Conductivity µS Initial	2,623	2,615	2,663	2,661	2,840	2,837	2,830	
Temp °C Final	25.2	25.5	24.8	25.2	24.9	25.4	25.9	
D.O. mg/L Final	6.6	6.8	6.9	6.9	6.7	6.7	6.1	
pH s.u. Final	8.5	8.5	8.6	8.7	8.8	8.8	8.8	
Conductivity µS Final	2,566	2,592	2,656	2,696	2,829	2,825	2,838	

Tab	le o	f Ra	ndo	m P	ermuta	tion	s of	16				P.p	rom	elas	Test I	D#	1	8-96	6
7	12	15	15	1	2	7	16	10	2	14	15	7	13	13	10		1	8	10
13	3 1	8 4	16 5	7 14	10 13	11 3	10 14	13 9	5	11	7 2	13 9	16 15	7 6	7	5 8	13 4	2 5	14
3 11	8	16	5 14	15	6	2	6	2	13 16	13 8	5	12	3	9	2 13	_	3	5 10	8 4
14	9	1	6	3	9	14	13	8	6	5	8	14	7	3	15		11	4	7
2	16	10	13	5	5	13	2	11	7	3	12	5	14	12	16	2	2	9	15
4	6	13	7	2	15	1	9	1	4	7	10	6	9	11	9	7	6	16	11
6	14	6	10	4	14	4	15	3	3	4	16	2	6	5	1	12	10	6	9
10	15 10	2 7	1 12	13 9	12 11	16 9	3 8	4 12	8	10 15	1 4	15 11	5 8	14 16	12 8	14 9	12 14	3 14	2
12 15	7	5	2	10	7	8	12	6	14 15	6	13	16	12	15	4	11	8	12	1 6
16	2	11	8	8	8	15	5	16	1	1	9	8	1	8	14		5	13	5
9	13	14	3	6	4	10	11	5	12	9	3	10	4	4	3	10	9	1	3
8	11	9	4	11	3	12	7	7	10	12	14	3	10	1	6	15	16	15	12
1	5	12	11	16	16	5	4	14	9	16	11	1	2	10	5	1	15	7	13
5	4	3	9	12 Conc	1	6	1	15 Reps	11	2	6	4	11	2	11	3	7	11	16
11	8	16	5	5	13	1	13	2	16	14	12	9	8	7	5	13	3	13	3
2	2	8	8	14	16	4	3	8	11	10	14	15	1	2	11		5	15	9
6	13	2	13	6	5	9	15	11	10	12	6	16	15	16	9	10	12	16	15
14	12	4	16	16	11	14	10	5	12	3	3	12	14	15	13		4	1	16
8	6	3	9	4	10	6	4	16	2	2	9	8	16	4	6	5	15	7	8
9 3	15 10	12 11	10 12	3	2 12	12 5	6 11	7	15 8	4 9	13 5	7 14	7 11	9 10	12 1	14 3	8 13	8	11 5
16	1	13	14	8	14	15	5	3	7	11	15	6	12	5	7	11	13	3 14	4
1	14	14	2	9	15	16	14	6	14	7	8	3	13	11	8	7	7	12	7
4	4	6	4	12	3	11	8	15	9	8	1	13	6	3	3	15	9	9	12
15	5	1	11	10	6	3	7	10	5	5	11	10	10	12	15		14	5	2
5	3	5	6	7	7	13	2	14	3	16	4	5	5	13	4	9	16	2	6
12 10	7 11	15 10	15 3	15	9 4	8 2	12 1	12 4	13 6	15 6	10 7	1 11	4 9	6 14	16 10		6 11	11 4	1 13
7	9	7	3 7	11	1	7	16	13	1	13	2	4	2	14	2	12	2	10	14
13	16	9	1	1	8	10	9	9	4	1	16	2	3	8	14		10	6	10
1 9 10 4 7	6 15 16 14 3	7 11 4 1 13	4 3 5 9 14	8 11 12 5 15	6 15 9 5 2	5 9 16 4 1	2 10 11 13 14 9	8 1 7 6 16	15 3 1 8 5	4 8 7 15 14	6 2 16 5 9	6 15 11 12 2	1 7 8 5 16	4 9 3 7 1	5 8 3 16 12	6	13 1 2 11 14	2 14 3 8 4	10 3 4 1 13
16 3	11 10	2 16	1 16	14 13	16 7	6 13	1	3 11	4 14	16 9	14 10	3 16	15 2	11 10	11 2	3 10	9 7	12 10	5 16
11	13	9	13	4	13	8	3	5	13	10	12	5	12	5	14		16	5	6
15	2	3	12	9	12	2	4	13	10	3	13	14	4	2	1	14	8	6	12
14	1	14	6	10	1	3	12	4	2	2	4	13	3	16	9	9	3	7	14
13	12	5	11	3	11	15	8	2	7	11	7	8	14	6	4	4	4	15	11
12 8	5 9	10 8	7 10	2 6	14 4	7 11	15 7	14 10	16 11	13 6	1 8	9 4	10 9	12 8	10 15	11 8	10 6	9 11	8 9
2	7	6	2	1	8	10	6	15	12	1	11	7	11	13	6	1	15	13	15
6	4	15	8	16	10	14	16	9	6	12	3	10	6	14	7	2	12	16	7
5	8	12	15	7	3	12	5	12	9	5	15	1	13	15	13	15	5	1	2
13	4	10	4	16	13	16	13	5	3	6	14	1	16	8	7	2	3	3	12
5 2	14 2	4 2	6 15	8 14	2 16	15 9	1 12	13 16	14 6	16 10	4 15	15 14	4 9	3 10	12 1	12 14	1 8	4 8	7 16
7	12	15	8	12	3	5	14	7	12	5	13	16	1	7	5	11	2	9	3
6	9	7	14	9	14	10	11	15	11	12	1	12	12	14	16	3	11	11	8
14	5	16	7	10	8	11	8	14	13	7	11	6	3	11	4	4	6	6	9
15	11	8	9	7	12	8	7	1	15	9	3	3	7	13	11	10	4	5	1
11	6	6	1	4	1	3	16	12	5	4	9	13	13	6	8	15	9	1	14
4 1	10 8	3 1	16 13	2 1	11 15	7 4	9 4	6 11	9 4	1 2	8 16	4 5	11 8	5 1	2 9	16 5	10 12	12 16	4 6
9	7	14	2	6	4	14	10	9	8	15	10	7	10	9	10	6	14	10	11
12	1	9	10	15	5	2	15	10	2	14	2	8	2	4	13	8	5	15	5
3	3	12	11	5	9	6	6	3	10	13	12	9	6	2	15	7	15	7	13
10	15	11	5	13	7	12	5	2	7	11	5	10	15	12	3	1	13	13	10
8 16	13 16	13 5	3 12	3 11	10 6	13 1	2 3	4 8	1 16	8 3	6 7	11 2	14 5	15 16	6 14	9 13	16 7	2 14	2 15
10	-0	•			Ü	-	J	J	10	J	,	_	,	10	14	13	,		10

CHEMICAL ANALYSIS

Please note the subcontract laboratory has its own QAQC and data review processes, and therefore New England Bioassay does not review the analytical results we receive.



Monday, July 16, 2018

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGE Sample ID#s: CA85961 - CA85964

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618
MA Lab Registration #M-CT007
ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301 PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007 VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823

Page 1 of 13



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

P.O.#:

July 16, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Informa	ation	Custody Inform	ation	<u>Date</u>	<u>Time</u>
Matrix:	WASTE WATER	Collected by:		07/09/18	6:30
Location Code:	NEB	Received by:	LB	07/09/18	16:35

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data

SDG ID: GCA85961

Phoenix ID: CA85961

Project ID: PATRIOT BEVERAGE
Client ID: EFFLUENT 1 C38-2609

22267

D	D!	RL/	1.1-24-	D:14:	D = 1 = /Ti =	D.	D - f	
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference	
Aluminum	0.059	0.005	mg/L	1	07/11/18	EK	E200.7	
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/18	RS	SM3113B	
Copper	0.0017	0.0010	mg/L	1	07/11/18	EK	E200.7	
Hardness (CaCO3)	126	0.1	mg/L	1	07/12/18		E200.7	
Nickel	0.024	0.001	mg/L	1	07/11/18	EK	E200.7	
Lead	< 0.0003	0.0003	mg/L	1	07/10/18	RS	SM3113B	
Zinc	0.011	0.001	mg/L	1	07/11/18	EK	E200.7	B*
Alkalinity-CaCO3	1160	5,00	mg/L	1	07/10/18	RR/EG	SM2320B-11	
Conductivity	2580	5.00	umhos/cm	1	07/10/18	RR/EG	SM2510B-11	
Ammonia as Nitrogen	0.73	0.10	mg/L	2	07/12/18	WHM	E350.1	
Tot. Diss. Solids	1600	20	mg/L	2	07/12/18	DA/KDB	SM2540C-11	
Tot. Org. Carbon	9.08	0.50	mg/L	1	07/10/18	RR/EG	SM5310B-11	
Total Solids	1700	20	mg/L	2	07/10/18	DA/KDB	SM2540B-11	
Total Metals Digestion	Completed				07/10/18	AG		

B* = Present in blank, a bias is possible.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 16, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

P.O.#:

July 16, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WASTE WATERCollected by:07/09/186:30Location Code:NEBReceived by:LB07/09/1816:35

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data

SDG ID: GCA85961

Phoenix ID: CA85962

Project ID: PATRIOT BEVERAGE

22267

Client ID: RECEIVING WATER-1 C38-2610

		RL/						
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference	
Aluminum	0.084	0.005	mg/L	1	07/11/18	EK	E200.7	
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/18	RS	SM3113B	
Copper	0.0029	0.0010	mg/L	1	07/11/18	EK	E200.7	
Hardness (CaCO3)	113	0.1	mg/L	1	07/12/18		E200.7	
Nickel	0.004	0.001	mg/L	4	07/11/18	EK	E200.7	
Lead	< 0.0003	0.0003	mg/L	1	07/10/18	RS	SM3113B	
Zinc	0.006	0.001	mg/L	1	07/11/18	EK	E200.7	B*
Alkalinity-CaCO3	1200	5.00	mg/L	1	07/10/18	RR/EG	SM2320B-11	
Conductivity	2570	5.00	umhos/cm	4	07/10/18	RR/EG	SM2510B-11	
Ammonia as Nitrogen	0.28	0.05	mg/L	1	07/12/18	WHM	E350.1	
рН	8.50	1.00	pH Units	1	07/10/18 11:44	RWR	SM4500-H B-11	
Tot. Org. Carbon	9.65	0.50	mg/L	1	07/10/18	RR/EG	SM5310B-11	
Total Metals Digestion	Completed				07/10/18	AG		

Project ID: PATRIOT BEVERAGE

Client ID: RECEIVING WATER-1 C38-2610

RL/

Parameter Result PQL Units Dilution Date/Time By Reference

B* = Present in blank, a bias is possible.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 16, 2018

Reviewed and Released by: Deb Lawrie, Project Manager

NEB Issued:8/2/2018

Phoenix I.D.: CA85962



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O,Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 16, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Informa	<u>ation</u>	Custody Inform	<u>nation</u>	<u>Date</u>	<u>Time</u>
Matrix:	WASTE WATER	Collected by:		07/09/18	7:00
Location Code:	NEB	Received by:	LB	07/09/18	16:35
Rush Request:	Standard	Analyzed by:	see "By" below		

Laboratory Data

SDG ID: GCA85961

Phoenix ID: CA85963

Project ID: PATRIOT BEVERAGE Client ID: EFFLUENT GRAB 1

22267

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.04	0.02	mg/L	1	07/09/18 19:35	0	SM4500CLG-97
pH	8.51	1.00	pH Units	1	07/10/18 11:47	RWR	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

P.O.#:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 16, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 16, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive Manchester, CT 06040

Sample Information

Matrix:

WASTE WATER

Location Code:

NEB

Rush Request:

Standard

P.O.#:

22267

Custody Information

Collected by:

. .

<u>Date</u> 07/09/18 <u>Time</u> 13:25

Received by:

LB

07/09/18

16:35

Analyzed by: see "By" below

Laboratory Data

SDG ID: GCA85961

Phoenix ID: CA85964

Project ID: Client ID: PATRIOT BEVERAGE

SRCF LAB WATER

		RL/						
Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference	
Aluminum	0.011	0.005	mg/L	1	07/11/18	EK	E200.7	
Cadmium	< 0.0001	0.0001	mg/L	1	07/10/18	RS	SM3113B	
Copper	< 0.0010	0.0010	mg/L	1	07/11/18	EK	E200.7	
Hardness (CaCO3)	45.7	0.1	mg/L	1	07/12/18		E200.7	
Nickel	< 0.001	0.001	mg/L	1	07/11/18	EK	E200.7	
Lead	< 0.0003	0.0003	mg/L	1	07/10/18	RS	SM3113B	
Zinc	0.002	0.001	mg/L	1	07/11/18	EΚ	E200.7	В*
Alkalinity-CaCO3	70.9	5.00	mg/L	1	07/10/18	RR/EG	SM2320B-11	
Conductivity	181	5.00	umhos/cm	1	07/10/18	RR/EG	SM2510B-11	
Ammonia as Nitrogen	< 0.05	0.05	mg/L	1	07/12/18	WHM	E350.1	
Hq	7.84	1.00	pH Units	1	07/10/18 11:51	RWR	SM4500-H B-11	
Tot. Org. Carbon	< 0.50	0.50	mg/L	1	07/10/18	RR/EG	SM5310B-11	
Total Metals Digestion	Completed				07/10/18	AG		

Project ID: PATRIOT BEVERAGE Client ID: SRCF LAB WATER

Phoenix I.D.: CA85964

RL/

Parameter Result PQL Units Dilution Date/Time By Reference

B* = Present in blank, a bias is possible.

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 16, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



Environmental Laboratories, Inc.

587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 16, 2018

QA/QC Data

SDG I.D.: GCA85961

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 437861 (mg/L), C	C Sam	ole No: (CA84774	(CA8596	31, CA	85962,	CA8596	i4)					
Cadmium - Water	BRL	0.0001	<0.0004	<0.0004	NC	102			94.0			75 - 125	20
Lead (Furnace) - Water	BRL	0.001	< 0.0003	< 0.001	NC	104			106			75 - 125	30
QA/QC Batch 437981 (mg/L), C	C Sam	ole No: 0	CA85650	(CA8596	51)								
ICP Metals - Aqueous													
Aluminum	BRL	0.0050	0.066	0.0694	5.00	93.7			101			75 - 125	20
Copper	BRL	0.0025	0.011	0.0094	NC	93.5			101			75 - 1 25	20
Nickel	BRL	0.0005	0.009	0.0085	5.70	90.8			93.1			75 - 1 25	20
Zinc	0.0015	0.0010	0.018	0.0174	3.40	90.8			98.1			75 - 125	20
QA/QC Batch 437982 (mg/L), C	C Samp	ole No: (CA85977	(CA8596	52, CA	85964)							
ICP Metals - Aqueous													
Aluminum	BRL	0.0050	0.034	0.0337	0.90	95.9			100			75 - 125	20
Copper	BRL	0.0025	0.0033	<0.0025	NC	96.5			99.9			75 - 125	20
Nickel	BRL	0.0005	< 0.001	<0.0005	NC	94.5			94.9			75 - 125	20
Zinc	0.0016	0.0010	0.004	0.0030	NC	95.1			96.8			75 - 125	20



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 16, 2018

QA/QC Data

SDG I.D.: GCA85961

Parameter	Blank	Bik RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	RPD Limits
QA/QC Batch 437947 (mg/L), Q	C Sam	ole No:	CA79737	(CA859	61)								
Total Solids Comment:	BRL	10	97	97	0	100						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	erange 7	75-125%								
QA/QC Batch 438446 (mg/L), Q	C Samı	ole No:	CA85466	(CA859	61)								
Tot. Diss. Solids Comment:	BRL	10	<10	<10	NC	99.0						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	e range 7	75-125%								
QA/QC Batch 438003 (mg/L), Q	C Sam	ole No:	CA85490	(CA859	61, CA	35962,	CA8596	54)					
Alkalinity-CaCO3 Comment:	BRL	5.00	46	46	NC	107						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	75-125%								
QA/QC Batch 438184 (mg/L), Q	C Samp	ole No:	CA85490	(CA859	61, CA	35962,	CA8596	64)					
Alkalinity-CaCO3 Comment:	BRL	5.00	46	46	NC	107						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	'5-125%								
QA/QC Batch 437886 (mg/L), Q	C Samp	ole No:	CA85490	(CA859	63)								
Chlorine Residual	BRL	0.02	<0.02	<0.02	NC	107							
QA/QC Batch 438013 (umhos/cr Conductivity Comment:	m), QC BRL	Sample 5.00	No: CA8 1020	5490 (C 1020	A8596 ⁻ 0	99.2	5962, C	\85964)				85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	'5-125%								
QA/QC Batch 438202 (umhos/cr	m), QC	Sample	No: CA8	5490 (C	A8596	I, CA85	962, CA	\85964 <u>)</u>					
Conductivity Comment:	BRL	5.00	1020	1020	0	99.2						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	′5-125%								
QA/QC Batch 437998 (pH), QC	Sample	No: C	A85490 (C	A85962	., CA85	963, C	485964))					
pH Comment:			7.50	7.53	0.40	98.5						85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	'5-125%								
QA/QC Batch 438116 (mg/L), Q	C Samp	ole No:	CA85600	(CA859	61, CA	35962,	CA8596	64)					
Total Organic Carbon Comment:	BRL	1.0	8.2	8.4	2.40	101			104			85 - 115	20
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	range 7	'5-125%								
QA/QC Batch 438143 (mg/L), Q	C Samp	ole No:	CA85961	(CA859	61, CA8	35962,	CA8596	64)					
Ammonia as Nitrogen	BRL	0.05	0.73	0.73	0	99.7			97.9			90 - 110	20

QA/QC Data

SDG I.D.: GCA85961

Dup Rec RPD Blk Dup LCS LCSD LCS MS MSD MS Sample Blank RL Result RPD RPD Limits Limits Parameter Result % RPD

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

July 16, 2018

Monday, July 16, 2018 Criteria: None

Sample Criteria Exceedances Report GCA85961 - NEB

Otato.	1417						RL	Analysis
SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	Criteria	Units

^{***} No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 11 of 13



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 16, 2018 SDG I.D.: GCA85961

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

		1			5	N	CHAIN OF CIRTORY BECODE	IST O	2	757	100			2	7	Temp2	2	Pg	ŏ	
PHK	PHOENIX Environmental Laboratories, Inc.	Inc.		28	CHAIN OF CUS IOUT RECORD 587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726	ddle Tur srvice@	East Middle Turnpike, P.O. Box 370 Email: service@phoenixlabs.com Client Services (860)	O. Box abs.com	370, Mg (98	Manchester, Fax (860) 645 645-8726	Manchester, CT 060 Fax (860) 645-0823 645-8726	1.040			Data Del	! ≥ # =	nberly.wi	one):		Gs Kev
Customer: N	Customer: New England Bioassay				<u> </u>	Project:	$\overline{}$	phiot	3	Puler	Severases		\$		Project P.O:	1 1	33	733567	1 1	
Address: 77	77 Batson Drive			a	-	Report to:	- O	Kim Wills			0) 	,	, Pr	Phone #:		860-643-9560	9560		ì
Mai	Manchester, CT 06042				_	rvoice	Invoice to: Kim Wills	n Wills				Í		Fax#	#	860	860-646-7169	169		
Samoler's	Client Sample - Information - Identification	Identifica	ation		Ā	lalysis		/	/	/ /		1/3	NA S	Tall	1	J. S.		To the state of th	3/3	/
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Matrix Code: DW=drinking water GW=groundwater	r WW=wastewater S=soil/solid SL=sludge A=air	olid O=other	ther			103	Control of the contro	y 39%	SI SIGN	1000		3/3/4/			(1 m				E THE THE	
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Relinquished by	and Jugan	Accepted by	ad by:	77	Date 12/6	Ra	16 10 16 35			Turnaround: 1 Day* 2 Days* 3 Days*				Requirements for CT Res. Criteria CW Protection GA Mobility	for CI eria ection (ity			Requirements for MA GW-1 GW-2 GW-3	GW-1 GW-2 GW-3	or MA
Comments, Specia Please see detectic Cd - 0.0005 mg/L; F	Comments, Special Requirements or Regulations: Please see detection limits (MLs) listed next to each parameter above. Metals MLs are listed below: Cd - 0.0005 mg/L; Pb - 0.0005 mg/L; Cu - 0.003 mg/L; Zn - 0.005 mg/L; Ni - 0.005 mg/L; Al - 0.02 mg/L	n paramete	er above. M 005 mg/L; N	Metals MLs are listed below: Ni - 0.005 mg/L; Al - 0.02 m	re listed t	elow:			js	Surcharge Applies	Applies			GB Mobility SW Protection Res. Vol. Ind. Vol.	ection				S-1 S-2 S-3 MCP Certification Other	ification



Wednesday, July 18, 2018

Attn: Ms. Kim Wills
New England Bioassay
a Division of GZA GeoEnvironmental
77 Batson Drive
Manchester, CT 06040

Project ID: PATRIOT BEVERAGES MA

Sample ID#s: CA87630 - CA87632

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Phyllis/Shiller

Laboratory Director

NELAC - #NY11301 CT Lab Registration #PH-0618 MA Lab Registration #M-CT007 ME Lab Registration #CT-007 NH Lab Registration #213693-A,B NJ Lab Registration #CT-003 NY Lab Registration #11301 PA Lab Registration #68-03530 RI Lab Registration #63 UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 18, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

Time

7:00

77 Batson Drive

Manchester, CT 06040

<u>Sample Information</u> <u>Custody Information</u> <u>Date</u>

Matrix: WASTE WATER Collected by: 07/11/18

Location Code: NEB Received by: SW 07/11/18 16:30

Rush Request: Standard Analyzed by: see "By" below

P.O.#: 22267 Laboratory Data SDG ID: GCA87630

Phoenix ID: CA87630

Project ID: PATRIOT BEVERAGES MA
Client ID: EFFLUENT-2 C38-2652

Parameter Result PQL Units Dilution Date/Time By Reference

Ammonia as Nitrogen 0.57 0.05 mg/L 1 07/17/18 WHM E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 18, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Fax (860) 645-0823 Tel. (860) 645-1102

Analysis Report

July 18, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Information **Custody Information** Matrix:

NEB

Location Code: Rush Request:

Standard 22267

P.O.#:

WASTE WATER

Collected by: Received by:

Analyzed by:

07/11/18 07/11/18

Date

7:30

<u>Time</u>

16:30

see "By" below

aboratory Data

SDG ID: GCA87630

Phoenix ID: CA87631

PATRIOT BEVERAGES MA Project ID:

Client ID: **RECEIVING WATER-2 C38-2653**

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Ammonia as Nitrogen	0.26	0.05	mg/L	1	07/17/18	WHM	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services. This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 18, 2018

Reviewed and Released by: Deb Lawrie, Project Manager

Ver 1

Page 3 of 8

44 of 64 NEB Issued:8/2/2018



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 18, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

 Sample Information
 Custody Information
 Date
 Time

 Matrix:
 WASTE WATER
 Collected by:
 07/11/18
 7:00

 Location Code:
 NEB
 Received by:
 SW
 07/11/18
 16:30

Rush Request: Standard Analyzed by: see "By" below

P.O.#: 22267

Laboratory Data

SDG ID: GCA87630

Phoenix ID: CA87632

Project ID: PATRIOT BEVERAGES MA

Client ID: EFFLUENT GRAB-2

RL/ Date/Time Parameter **PQL** Units Dilution Result By Reference Chlorine Residual 0.05 0.02 07/11/18 20:33 SM4500CLG-97 mg/L 8.75 07/11/18 21:35 RR/EG SM4500-H B-11 1.00 pH Units pН 1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 18, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 18, 2018

QA/QC Data

	- .	_		
SD	(4 L	1).	$CC\Delta 87630$	1

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 438371 (mg/L), C	C Samp	ole No:	CA87176	(CA876	32)								
Chlorine Residual	BRL	0.02	0.34	0.33	3.00	114							
QA/QC Batch 438466 (pH), QC	Sample	No: CA	487588 (C	CA87632	2)								
pН				12.14		98.9						85 - 115	20
Comment:													
Additional: LCS acceptance range	is 85-11	5% MS	acceptance	erange 7	75-125%								
QA/QC Batch 438864 (mg/L), Q	C Samp	ole No:	CA87610	(CA876	30, CA	87631)							
Ammonia as Nitrogen	BRL	0.05	0.14	0.13	NC	92.5			94.6			90 - 110	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis Shiller, Laboratory Director

July 18, 2018

Wednesday, July 18, 2018

Sample Criteria Exceedances Report GCA87630 - NEB

Criteria: None State: MA

SampNo Acode Phoenix Analyte Criteria Res

Result

Criteria

Analysis Units

RL

Criteria

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 6 of 8

^{***} No Data to Display ***



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 18, 2018 SDG I.D.: GCA87630

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

										MATT	·.	
PHOE Environmental	HNIX Sental Laboratories,	Inc.		587	CHA East Mido Email: sen	CHAIN OF CUSTODY RECOF Fast Middle Tumpike, P.O. Box 370, Manchester, Email: service@phoenixlabs.com Fax (860) 646 Client Services (860) 645-8726	STOD) 5. Box 370, bs.com s (860)	CHAIN OF CUSTODY RECORD 587 East Middle Tumpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726	0;	Temp Data Delivery Fax # X Emait. kin Format	Therity wills	Pg of neb): @gza.com
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Address: (/	// batson Drive Manchester, CT 06042			Î	꽃 호	Report to: Kim Invoice to: Kim	Kim Wills		j 1	Fax#: 86	860-646-7169	
Sampler's Signature	Client Sample - Information - Identification	- Identifica	ation Date		Ana	Analysis Request		Transford			2000	1000
Matrix Code: DW=drinking water GW=groundwater	r WW=wastewater S=soil/soid SL=sludge A=air	olid 0=other	her			Thou i do	ILIONES IN			100 8 10 10 10 10 10 10 10 10 10 10 10 10 10		
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Comments, Special	Comments, Special Requirements or Regulations:							Other		SW Protection Res. Vol.		S-2 S-3
Please see detection	Please see detection limits (MLs) listed next to each parameter above	h paramete	er above				. 4	* Surcharge Applies	<u>=</u>	Ind, Vol.		MCP Certification Other
Please CC: Melanie	Please CC: Melanie.Cruff@gza.com and Robin.Faulk@gza.com on reports	ılk@gza.cc	om on report	ø								

Page 8 of 8



Thursday, July 19, 2018

Attn: Ms. Kim Wills **New England Bioassay** a Division of GZA GeoEnvironmental 77 Batson Drive Manchester, CT 06040

Project ID: **PATRIOT BEVERAGES** Sample ID#s: CA89679 - CA89681

This laboratory is in compliance with the NELAC requirements of procedures used except where indicated.

This report contains results for the parameters tested, under the sampling conditions described on the Chain Of Custody, as received by the laboratory. This report is incomplete unless all pages indicated in the pagination at the bottom of the page are included.

A scanned version of the COC form accompanies the analytical report and is an exact duplicate of the original.

If you have any questions concerning this testing, please do not hesitate to contact Phoenix Client Services at ext. 200.

Sincerely yours,

Laboratory Director

NELAC - #NY11301

CT Lab Registration #PH-0618 MA Lab Registration #M-CT007

ME Lab Registration #CT-007

NH Lab Registration #213693-A,B

NJ Lab Registration #CT-003 NY Lab Registration #11301 PA Lab Registration #68-03530

RI Lab Registration #63

UT Lab Registration #CT00007

VT Lab Registration #VT11301

587 East Middle Turnpike, P.O. Box 370, Manchester, CT 06040 Telephone (860) 645-1102 Fax (860) 645-0823



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 19, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample Informa	<u>ition</u>	Custody Inform	ation	<u>Date</u>	<u>Time</u>
Matrix:	WASTE WATER	Collected by:		07/13/18	6:45
Location Code:	NEB	Received by:	SW	07/13/18	15:15
	G: 1 1				

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data

SDG ID: GCA89679

Phoenix ID: CA89679

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT-3 C38-2716

22267

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Ammonia as Nitrogen	0.50	0.05	mg/L	1	07/18/18	WHM	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

P.O.#:

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 19, 2018

Reviewed and Released by: Deb Lawrie, Project Manager

Ver 1



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 19, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive

Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WASTE WATERCollected by:07/13/186:30Location Code:NEBReceived by:SW07/13/1815:15

Rush Request: Standard Analyzed by: see "By" below

P.O.#: 22267 Laboratory Data

SDG ID: GCA89679

Phoenix ID: CA89680

Project ID: PATRIOT BEVERAGES

Client ID: RECEIVING WATER-3 C38-2717

RL/

Parameter	Result	PQL	Units	Dilution	Date/Time	Ву	Reference
Ammonia as Nitrogen	0.34	0.05	mg/L	প	07/18/18	WHM	E350.1

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 19, 2018

Reviewed and Released by: Deb Lawrie, Project Manager

Ver 1



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

Analysis Report

July 19, 2018

FOR: Attn: Ms. Kim Wills

New England Bioassay

a Division of GZA GeoEnvironmental

77 Batson Drive Manchester, CT 06040

Sample InformationCustody InformationDateTimeMatrix:WASTE WATERCollected by:07/13/186:45Location Code:NEBReceived by:SW07/13/1815:15

Rush Request: Standard Analyzed by: see "By" below

Laboratory Data SDG ID: GCA89679

Phoenix ID: CA89681

Project ID: PATRIOT BEVERAGES
Client ID: EFFLUENT GRAB-3

22267

Parameter	Result	RL/ PQL	Units	Dilution	Date/Time	Ву	Reference
Chlorine Residual	0.03	0.02	mg/L	1	07/13/18 20:13	0	SM4500CLG-97
рН	8.82	1.00	pH Units	1	07/14/18 02:42	RR/EG	SM4500-H B-11

RL/PQL=Reporting/Practical Quantitation Level ND=Not Detected BRL=Below Reporting Level

Comments:

P.O.#:

The regulatory hold time for pH is immediately. This pH was performed in the laboratory and may be considered outside of hold-time.

The regulatory hold time for Chlorine is immediately. This Chlorine was performed in the laboratory and may be considered outside of hold-time.

If there are any questions regarding this data, please call Phoenix Client Services.

This report must not be reproduced except in full as defined by the attached chain of custody.

Phyllis Shiller, Laboratory Director

July 19, 2018

Reviewed and Released by: Deb Lawrie, Project Manager



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823

QA/QC Report

July 19, 2018

QA/QC Data

SDG I.D.: GCA89679

Parameter	Blank	Blk RL	Sample Result	Dup Result	Dup RPD	LCS %	LCSD %	LCS RPD	MS %	MSD %	MS RPD	% Rec Limits	% RPD Limits
QA/QC Batch 439013 (mg/L),	QC Samp	ole No:	CA89229	(CA896	79, CA	89680)							
Ammonia as Nitrogen	BRL	0.05	<0.05	<0.05	NC	94.7			95.0			90 - 110	20
QA/QC Batch 438755 (mg/L),	QC Samp	ole No:	CA89407	(CA896	81)								
Chlorine Residual	BRL	0.02	<0.01	<0.02	NC	114							
QA/QC Batch 438798 (pH), QC	Sample	No: C	A89936 (C	CA89681)								
pH			7.07	7.06	0.10	99.0						85 - 115	20

If there are any questions regarding this data, please call Phoenix Client Services at extension 200.

RPD - Relative Percent Difference

LCS - Laboratory Control Sample

LCSD - Laboratory Control Sample Duplicate

MS - Matrix Spike

MS Dup - Matrix Spike Duplicate

NC - No Criteria

Intf - Interference

Phyllis/Shiller, Laboratory Director

July 19, 2018

Thursday, July 19, 2018 Criteria: None

Sample Criteria Exceedances Report GCA89679 - NEB

				GCA896/9 - NEB				
State:	CI						RL	Analysis
SampNo	Acode	Phoenix Analyte	Criteria	Result	RL	Criteria	Criteria	Units

^{***} No Data to Display ***

Phoenix Laboratories does not assume responsibility for the data contained in this exceedance report. It is provided as an additional tool to identify requested criteria exceedences. All efforts are made to ensure the accuracy of the data (obtained from appropriate agencies). A lack of exceedence information does not necessarily suggest conformance to the criteria. It is ultimately the site professional's responsibility to determine appropriate compliance.

Page 6 of 8

55 of 64 NEB Issued:8/2/2018



587 East Middle Turnpike, P.O.Box 370, Manchester, CT 06045 Tel. (860) 645-1102 Fax (860) 645-0823



Analysis Comments

July 19, 2018

SDG I.D.: GCA89679

The following analysis comments are made regarding exceptions to criteria not already noted in the Analysis Report or QA/QC Report: None.

Page 7 of 8

a com	860-645-7169	1 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			Requirements for MA
	(mA) Project P.O: Phone #: 860- Fax #: 860-				Requirements for CT
CHAIN OF CUSTODY RECORD 587 East Middle Tumpike, P.O. Box 370, Manchester, CT 06040 Email: service@phoenixlabs.com Fax (860) 645-0823 Client Services (860) 645-8726	Project: Patriot Benefices Report to: Kim Wills Invoice to: Kim Wills	Analysis Request	Train To E		Date: Time: Turnaround: 1 Day* 2./8 - / 5 / 4 4 5
The.	ssay 042	Client Sample - Information - Identification Date	er S=soii/solid O=other A=air	mple Sample Date Time on Matrix Sampled Sampled Sampled 2711ε WW Πημη1β ο 0 6 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	
PHOENIX Environmental Laboratories,	Customer: New England Bioassay Address: 77 Batson Drive Manchester, CT 06042	Client Sample - Infe	Matrix Code: DW=drinking water GW=groundwater SL=sludge	Phoenix Customer Sample Sample # Identification Control of Effluent-3 (28-2716 Control of Effluent Grab - 3 Effluent Grab - 3	Relinquished by: Comments, Special Requirements or Regulations: Please See detection limits (MLs) listed next to each parameter above

SAMPLE RECEIPT CHEMISTRY & CHAIN OF CUSTODY DOCUMENTS

NEW ENGLAND BIOASSAY - INITIAL CHEMISTRY DATA

PERMITTEE: Patriot Beverages

NEB JOB # 05.0044697.00

7	r		ır —				
DATE RECEIVED	7/9/18		7/1	1/18	7/13/18		
SAMPLE TYPE:	EFF#1	BROOK #1	EFF #2	BROOK #2	EFF #3	BROOK #3	
coc#	C38-2609	C38-2610	C38-2652	C38-2653	C38-2716	C38-2717	
pH (SU)	8.1	7.1	8.5	7.0	8.7	7.0	
Temperature (°C)	15.3	12.6	6.3	5.4	8.0	7.1	
Dissolved Oxygen (mg/L)	6.1	6.0	9.0	8.1	8.9	6.3	
Conductivity (µmhos)	2,597	758	2,663	909	2,857	868	
Salinity (ppt)	1	<1	1	<1	2	<1	
TRC - DPD (mg/L)	0.051	0.387	0.043	0.107	0.036	0.023	
TRC - Amperometric (mg/L)	< 0.05	< 0.05	NA	< 0.05	NA	NA	
Hardness (mg/L as CaCO ₃)	125	132	68	126	62	120	
Alkalinity (mg/l as CaCO ₃)	1,175	65	1,185	65	1,235	65	
Tech Initials	TBP/DD	TBP/DD	СВ	СВ	DD	DD	

NOTE: NA = NOT APPLICABLE

Data Reviewed By:

Date Reviewed:

NEW ENGLAND BIOASSAY	Y - CHAIN-OF-CUSTODY
Sample: Sample Set # / Sampler: Will Cot Suppose Title: Chief Changes Facility: Patriot Beverages	RECEIVING WATER Sampler: Title: Patriot Beverages
Sampling Method: X Composite Sample ID: Time: T	Sampling Method: X Grab Sample ID: Reedy Meadow Brook Date Collected: 7/7/8 Time Collected: OFF
Sampling Method: X Grab (for pH and TRC only X) Date Collected: $7/4/18$ Time Collected: 630	
Sample Type: Prechlorinated Dechlorinated Unchlorinated Chlorinated	Received ON ICE
Effluent Sampling Location and Procedures: Receiving Water Sampling Location and Procedures:	
Requested Analysis: X Chronic and modified acute Sample Sh	·inmont
Sample St	upment
Method of Shipment: NRB Courier Relinquished By: Date: Date: Date: Date: Parchase Order # to reference on invoice:	7/9/18 Time: 9:28 7/9/18 Time: 9:28 7/11/18 Time: 12:20 formation 7/9/18 13:15
FOR NEB US	SE ONLY
* Please return all ice packs NEB has provided to insure ac	
	mperature of Receiving Water Upon Receipt at Lab: 12.6°C

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSAY	Y - CHAIN-OF-CUSTODY
Sampler: Jangle Set # 2 Sampler: Jangle Set # 2 Title: Chipp plan Toll Facility: Patriot Beverages	Sampler: JAPAU Title: Chief Grant Turch Facility: Patriot Beverages
Sampling Method: X Composite Sample ID: Time: O700 End Date: 7 11 11 Time: O700	Sampling Method: X Grab Sample ID: Reedy Meadow Brook Date Collected: 7/1/18 Time Collected: 0720
Sampling Method: X Grab (for pH and TRC only X) Date Collected: 7	
Unchlorinated Chlorinated Chlorinated Effluent Sampling Location and Procedures:	
Receiving Water Sampling Location and Procedures: Requested Analysis:X Chronic and modified acute	
Sample Sh	
Method of Shipment: NEB Courier Relinquished By: Date: Date	7/11/18 Time: 9:39 7/11/18 Time: 9:37 7/11/18 Time: 9:37
rec' by (NEB) WW M Optional In	
Purchase Order # to reference on invoice:	Received ON ICE
FOR NEB U	
	mperature of Receiving Water Upon Receipt at Lab: 5.4 °C
Effluent COC# <u>C38-2652</u> R	eceiving Water COC# <u>C33-2653</u>

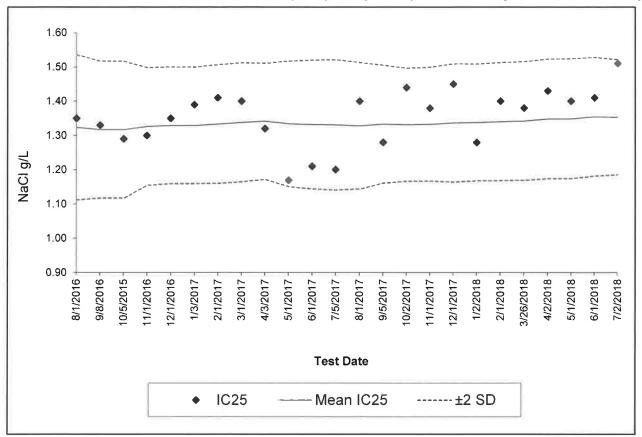
IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

NEW ENGLAND BIOASSA	- CHAIN-OF-CUSTODT
EFFLUENT Sample Set #3	RECEIVING WATER
Sampler: Im DRAPOAC	Sampler: An Deyo
Title: CLR OPERTOR	Title: CHIED CORRAPOR
Facility: Patriot Beverages	Facility: Patriot Beverages
1 44 15 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Sampling Method: X Composite	Sampling Method: X Grab
Sample ID: OUTFALL OO I	Sample ID: Reedy Meadow Brook
Start Date: 7/12/18 Time: 760	Date Collected: 7/13/18
End Date: 7/13/18 Time: OC45	Time Collected: OS 30
Sampling Method: X Grab (for pH and TRC only X) Date Collected: Time Collected: 45	
Sample Type: Prechlorinated	Gifa, if are Sola
Dechlorinated	
Unchlorinated Chlorinated	8 ,
•	
Effluent Sampling Location and Procedures:	
Receiving Water Sampling Location and Procedures:	
Requested Analysis: X Chronic and modified acute	
Sample SI	hipment
Method of Shipment: NEB Courier	
.	5/13/18
Relinquished By: Date:	7/13/18 Time: 1000
Received By: Date:	7/13/18 Time: 1000
rec'chy (NGB) A M Optional In	7/13/18 1130 formation 7/12/19 1130
rec'dry (N6B) AWY Optional In	formation 7/13/13 1136 Received
Purchase Order # to reference on invoice:	ON ICE
	0,4,102
FOR NEB U	
* Please return all ice packs NEB has provided to insure ac	ccurate temperature upon receipt to the NEB laboratory.
20	7.1
	emperature of Receiving Water Upon Receipt at Lab: 7.1 °C
Effluent COC# <u>C38-2716</u> R	eceiving Water COC# <u>C 38-2717</u>

IF THIS COOLER IS MISPLACED OR THE LABEL IS LOST, PLEASE SHIP TO: KIM WILLS, NEW ENGLAND BIOASSAY MANCHESTER, CT 06042

REFERENCE TOXICANT CHARTS

New England Bioassay Reference Toxicant Data: Sodium chloride (NaCl) *Pimephales promelas* 7-day Chronic Growth IC₂₅



							#T199-07	Growth	Avg.
Test ID	Date	IC ₂₅	Mean IC ₂₅	STD	-2STD	+2STD	Avg. CV	PMSD (%)	PMSD (%)
16-1064	8/1/2016	1.35	1.32	0.11	1,11	1,54	0.08	13.90	10.36
16-1259	9/8/2016	1.33	1.32	0.10	1.12	1.52	0.08	6.85	9.92
16-1473	10/5/2015	1.29	1.32	0.10	1.12	1.52	0.08	10.54	9.99
16-1593	11/1/2016	1.30	1,33	0.09	1,16	1.50	0.06	6.87	9.68
16-1735	12/1/2016	1.35	1.33	0.09	1.16	1.50	0.06	7.89	9.51
17-15	1/3/2017	1.39	1,33	0.08	1,16	1.50	0.06	6.16	9.24
17-152	2/1/2017	1.41	1.33	0.09	1.16	1.51	0.06	9.65	9.27
17-268	3/1/2017	1.40	1.34	0.09	1.16	1.51	0.06	20.53	10.07
17-481	4/3/2017	1.32	1.34	0.08	1.17	1.51	0.06	7.47	9.90
17-617	5/1/2017	1:17	1.33	0.09	1.15	1.52	0.07	10.74	9.95
17-765	6/1/2017	1.21	1,33	0.09	1,14	1.52	0.07	7.41	9.80
17-973	7/5/2017	1.20	1.33	0.09	1.14	1.52	0.07	10.39	9.83
17-1147	8/1/2017	1.40	1.33	0.09	1.14	1.51	0.07	11.35	9.91
17-1318	9/5/2017	1.28	1.33	0.09	1.16	1.50	0.06	13.74	10.11
17-1522	10/2/2017	1.44	1,33	0.08	1.17	1.50	0.06	10.36	10.12
17-1696	11/1/2017	1.38	1.33	0.08	1.17	1.50	0.06	9.27	10.08
17-1809	12/1/2017	1.45	1.34	0.09	1.16	1.51	0.06	26.17	10.78
18-11	1/2/2018	1.28	1.34	0.09	1.17	1.51	0.06	6.16	10.59
18-184	2/1/2018	1.40	1.34	0.09	1.17	1.51	0.06	10.52	10.51
18-416	3/26/2018	1.38	1.34	0.09	1,17	1.51	0.06	9.14	10.49
18-472	4/2/2018	1.43	1.35	0.09	1:17	1.52	0.06	6.25	10.57
18-608	5/1/2018	1.40	1.35	0.09	1.17	1.52	0.06	11.80	10.88
18-745	6/1/2018	1,41	1.35	0.09	1.18	1.53	0.06	13.87	11.08
18-919	7/2/2018	1.51	1.35	0.08	1.19	1.52	0.06	12.86	10.83

National 75th Percentile and 90th Percentile CV Averages for Fathead Growth IC25 (EPA 833-R-00-003): 0.38 - 0.45 PMSD Upper and Lower Bounds for Fathead Growth (EPA-821-R-02-013): 12% - 30%